THE INVENTION CLAIMED IS:

1. A transfer chamber comprising:

a main body having sidewalls adapted to couple to at least one processing chamber and at least one load lock chamber and to house at least a portion of a robot adapted to transport a substrate between the at least one processing chamber and the at least one load lock chamber;

a lid adapted to couple to and to seal a top portion of the main body of the transfer chamber; and

a domed bottom adapted to couple to and to seal a bottom portion of the main body of the transfer chamber.

2. The transfer chamber of claim 1 wherein the main body comprises a cylindrical interior wall and an exterior wall having a plurality of flat regions each adapted to couple to at least one of a load lock chamber and a processing chamber.

3. The transfer chamber of claim 2 wherein the main body is machined from a single piece of material.

4. The transfer chamber of claim 3 wherein the main body comprises aluminum.

5. The transfer chamber of claim 4 wherein the sidewalls of the main body have a minimum thickness of about 2 inches.

6. The transfer chamber of claim 1 wherein the lid is substantially flat.

7. The transfer chamber of claim 1 wherein the lid is domed.

8. The transfer chamber of claim 1 wherein the domed bottom is machined from a single piece of material.

9. The transfer chamber of claim 8 wherein the domed bottom comprises stainless steel.

10. The transfer chamber of claim 9 wherein the domed bottom has a minimum thickness of about 0.625 inches.

11. The transfer chamber of claim 1, wherein the domed bottom has a concave configuration such that a vertical distance between the lid and a central portion of the domed bottom is greater than a vertical distance between the lid and an outer edge of the domed bottom.

12. A vacuum processing system, comprising:

a transfer chamber comprising:

a main body having sidewalls adapted to couple to at least one processing chamber and at least one load lock chamber and to house at least a portion of a robot adapted to transport a substrate between the at least one processing chamber and the at least one load lock chamber;

a lid adapted to couple to and to seal a top portion of the main body of the transfer chamber; and

a domed bottom adapted to couple to and to seal a bottom portion of the main body of the transfer chamber;

at least one processing chamber coupled to the main body of the transfer chamber;

at least one load lock chamber coupled to the main body of the transfer chamber; and

a robot at least partially extending through the domed bottom into the transfer chamber, the robot adapted to

transport a substrate between the at least one processing chamber and the at least one load lock chamber via the transfer chamber.

13. The system of claim 12 wherein the main body comprises a cylindrical interior wall and an exterior wall having a plurality of flat regions each adapted to couple to at least one of a load lock chamber and a processing chamber.

14. The system of claim 13 wherein the main body of the transfer chamber is machined from a single piece of material.

15. The system of claim 14 wherein the main body of the transfer chamber comprises aluminum.

16. The system of claim 15 wherein the sidewalls of the main body of the transfer chamber have a minimum thickness of about 2 inches.

17. The system of claim 12 wherein the lid of the transfer chamber is substantially flat.

18. The system of claim 12 wherein the lid of the transfer chamber is domed.

19. The system of claim 12 wherein the domed bottom of the transfer chamber is machined from a single piece of material.

20. The system of claim 19 wherein the domed bottom of the transfer chamber comprises stainless steel.

21. The system of claim 20 wherein the domed bottom of the transfer chamber has a minimum thickness of about 0.625 inches.

22. The system of claim 12, wherein the domed bottom of the transfer chamber has a concave configuration such that a vertical distance between the lid of the transfer chamber and a central portion of the domed bottom is greater than a vertical distance between the lid and an outer edge of the domed bottom.

23. A method of forming a domed bottom for a transfer chamber adapted to couple at least one load lock chamber to at least one processing chamber, the method comprising:

selecting a material; and

forming a domed bottom from the material, the domed bottom having an outer diameter sized to fit against and configured to form a seal with a bottom portion of a main body of a transfer chamber and an aperture having a diameter sized to accommodate at least a portion of a robot adapted to transfer substrates between at least one load lock chamber and at least one processing chamber coupled to the transfer chamber.

24. The method of claim 23 wherein the material is stainless steel.

25. A transfer chamber comprising:

a main body having sidewalls adapted to couple to at least one processing chamber and at least one load lock chamber and to house at least a portion of a robot adapted to

transport a substrate between the at least one processing chamber and the at least one load lock chamber;

a lid adapted to couple to and to seal a top portion of the main body of the transfer chamber; and

a domed bottom adapted to couple to and to seal a bottom portion of the main body of the transfer chamber;

wherein the domed bottom comprises:

a cylindrical region having a height adapted to accommodate at least a portion of an arm of a robot positioned within the transfer chamber; and

a domed region having:

a first radiused portion having a first radius of curvature; and

a second radiused portion extending between the first radiused portion and the cylindrical region and having a second radius of curvature that is less than the first radius of curvature.

26. The transfer chamber of claim 25 wherein the first radius of curvature is greater than a radius of the main body.

27. The transfer chamber of claim 26 wherein the first radius of curvature is about 1.5 times a diameter of the main body.

28. The transfer chamber of claim 25 wherein the second radius of curvature is about 5-20 times a thickness of the domed region.

29. A method of forming a domed bottom for a transfer chamber adapted to couple at least one load lock

chamber to at least one processing chamber, the method comprising:

selecting a material; and

forming a domed bottom from the material, the domed bottom having:

a cylindrical region having a height adapted to accommodate at least a portion of an arm of a robot positioned within the transfer chamber; and

a domed region having:

a first radiused portion having a first radius of curvature; and

a second radiused portion extending between the first radiused portion and the cylindrical region and having a second radius of curvature that is less than the first radius of curvature.